

STEEL BUILDING PRODUCTS MANUFACTURED

by

Ceco

RESIDENCE CASEMENTS
CASEMENT DOORS
ARCHITECTURAL PROJECTED WINDOWS
COMMERCIAL PROJECTED WINDOWS
PIVOTED WINDOWS
BASEMENT WINDOWS
INDUSTRIAL DOORS
CONTINUOUS WINDOWS
MECHANICAL OPERATORS
WINDOW SCREENS

***Ceco* STEEL PRODUCTS CORPORATION**

Formerly CONCRETE ENGINEERING COMPANY • INC.

Manufacturing Division Headquarters • 5701 West 26th St., Chicago

General Offices • OMAHA

Ceco Steel Windows & Steel Doors for Architectural Use

This catalog contains a wide and varied selection of Ceco Steel Windows, Doors, Screens, and other products for your inspection.

These products are made by a highly specialized division of CECO STEEL PRODUCTS CORPORATION. This organization, which has been closely allied with the building industry for nearly thirty years, possesses complete facilities: design, engineering, and manufacturing, to meet the production requirements of your largest building project.

In this catalog you will find information, drawings, and specifications to assist you in selecting and specifying.

Wide Range and Adaptability for Every Type of Building—

You will find that the products included here are in no sense restricted or unduly specialized. Every type of building, from the small residence to the largest commercial or institutional building, may be equipped with Ceco Steel Windows, Steel Doors, Screens or other Ceco Products. The whole line may be used. The line is so designed that it can be in complete harmony with the building's architectural character, irrespective of the construction material you may have selected.

We Shall Be Happy to Cooperate with You—You are invited to utilize the services offered by the design, engineering and manufacturing facilities of CECO STEEL PRODUCTS COR-

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PORATION. The Ceco Organization has applied intensive study to the design and construction of steel windows and doors. This experience we shall be happy to place at your disposal in any way that will assist you in your work.

Branches in All Principal Cities (see back cover)—Ceco Branch offices are maintained in all the principal cities from coast to coast. In each branch there are competent Ceco sales engineers ready to assist you. These technicians are exclusive factory representatives, specialists in their line, and may be called upon at any time.

Specifications . . . FOR RESIDENCE CASEMENTS

General—All windows shall be the Residence Type Casement windows as manufactured by the CECO STEEL PRODUCTS CORPORATION, of Chicago, Illinois, or approved equal, as per written approval of the architect and shall be of sizes and types as shown on architect's drawings.

Material—All sections shall be especially designed, hot-rolled, new billet steel.

All frame and ventilator members shall be special Z shaped sections and shall be of 1 $\frac{1}{8}$ in. depth from front to back and have a combined weight of not less than 2 lbs. per lineal foot, exclusive of fins or anchors.

Ventilator members to be rolled with a baffle providing a continuous two point weathering contact, with frame members, throughout the entire perimeter of the ventilator without the aid of loose or applied linings.

Corners of frame and ventilator members shall be mitred and electrically butt welded.

All muntins shall be especially rolled T's with $\frac{5}{8}$ in. face and a depth of $\frac{7}{8}$ in. and shall be continuous between rails and stiles.

Head Drips shall be especially formed members.

Construction—At muntin intersections there shall be a mechanical joint rigidly interlocking the muntins flush with inside face.

A continuous drip shall be provided at transom bar and at head of all openings where the swing leaves extend the full height of opening.

Horizontal and vertical mullions to be provided where necessary to be of hot-rolled T shape members.

Side hinged ventilators to open out shall be hung on extension cleaning hinges of mild rolled steel sections. One hinge leaf securely welded to frame, the other leaf riveted to ventilator. Transom ventilator shall be hinged at top to open out and shall be equipped with close-up hinges. Sill ventilators shall be bottom hinged to open in and shall be equipped with butt hinges and friction slides.

All casements to be provided with open holes in both jambs near head for standard shade and drapery brackets. (Brackets not furnished by CECO STEEL PRODUCTS CORPORATION.)

Hardware—All hardware shall be Bronze Lacquer finish, attractively and accurately designed for the operation required. (Optional) All styles and types of handles and operating hardware may be obtained in solid bronze at a slight increase in cost. Where screens

are specified, Rotary (worm and gear) under-screen type operators shall be furnished.

Erection—Casements shall be set plumb and true, and mastic applied to provide weather-tight union between building construction, mullions and casement frames. (Window manufacturer to provide 1 lb. of mastic for each 10 ft. of casement perimeter.) Locking handle, Rotary operator and channel guide shall be shipped unattached, to be applied after erection in accordance with manufacturer's directions.

The locking handle keeper shall be attached by the manufacturer before shipment.

Provide either clip anchors, wood screws, continuous fins or redwood surrounds for anchoring casement frames to building construction as shown by architect's drawings.

Painting—All casements shall receive one coat of gray mineral paint by the manufacturer before shipment.

Note: Include in the painting specifications that all windows should be given one additional coat after erection, but before glazing. Further painting should be deferred until at least three weeks after glazing, to allow putty to set.

Note: Windows erected by the CECO STEEL PRODUCTS CORPORATION will be field painted by them if specified.

Glass and Glazing—Note: Glass and glazing should be furnished under glass and glazing specifications and not as part of window specifications.

All windows shall be glazed from the outside, all glass being set in a bed of putty and secured by glazing clips furnished by the window manufacturer. Face putty shall be applied in a neat, clean-cut, smooth manner.

Putty shall be a high grade of steel window putty.

Note: Specify types of glass, single strength glass is not recommended.

Screens—Screens for all open out ventilators shall be flat type applied on the inside of window frame. Each screen shall be easily attached or removed from the inside and shall permit complete operation (Opening, Closing, Locking) of ventilators without touching screen. Screens for open in ventilators shall be flat type applied on the outside of frame and shall be readily attached or removed.

Ceco 1 & 2 RESIDENCE CASEMENTS

PLATES SECTIONS HARDWARE



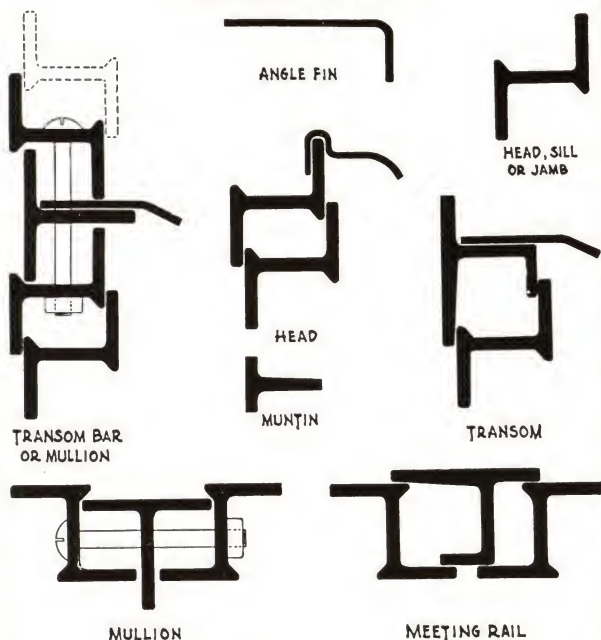
The Flexibility in the design of Ceco Steel Casements meets the modern demand of architects for distinction and close harmony in the appearance of the finished building.



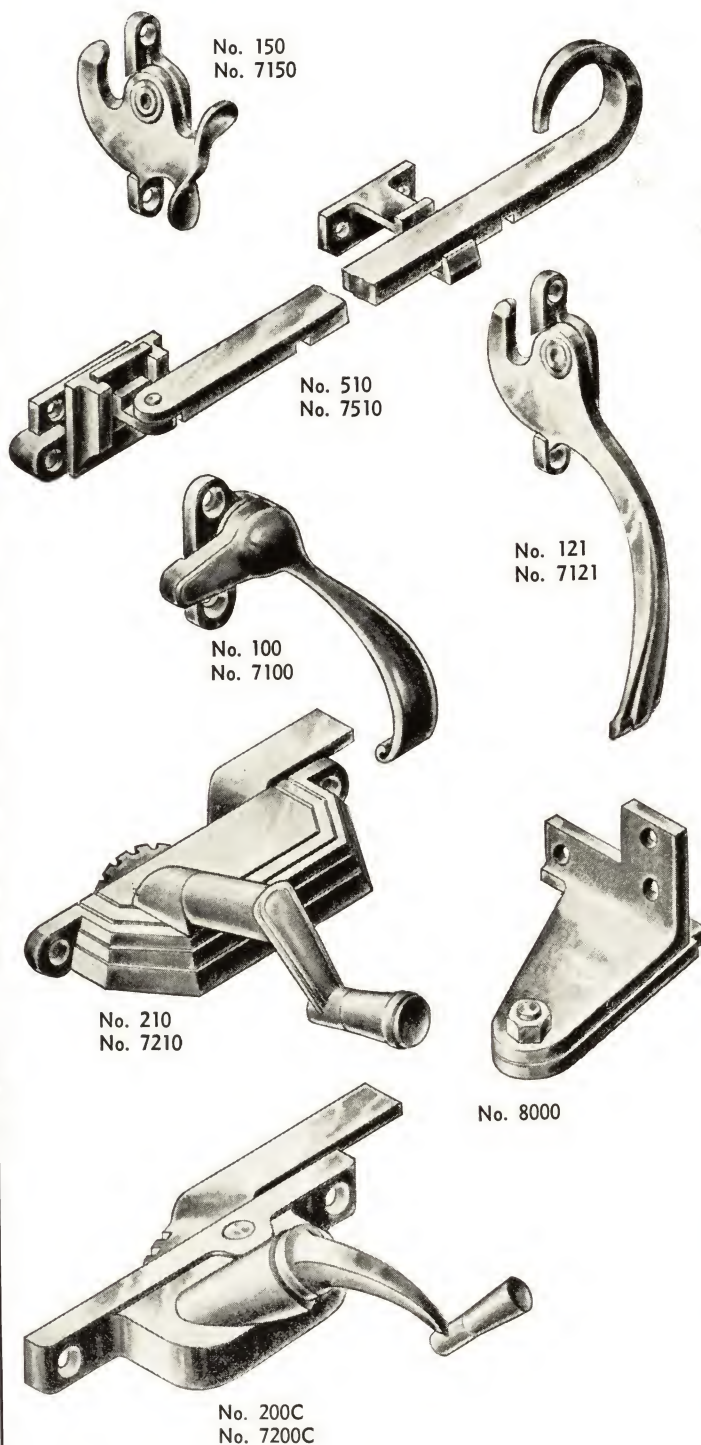
SILL OR JAMB

In Ceco Steel Casements, muntins may be omitted when it is desired to use leaded glass of any pattern or for the use of single lights of polished plate or other glass.

Sections Below 1/2 Full Size

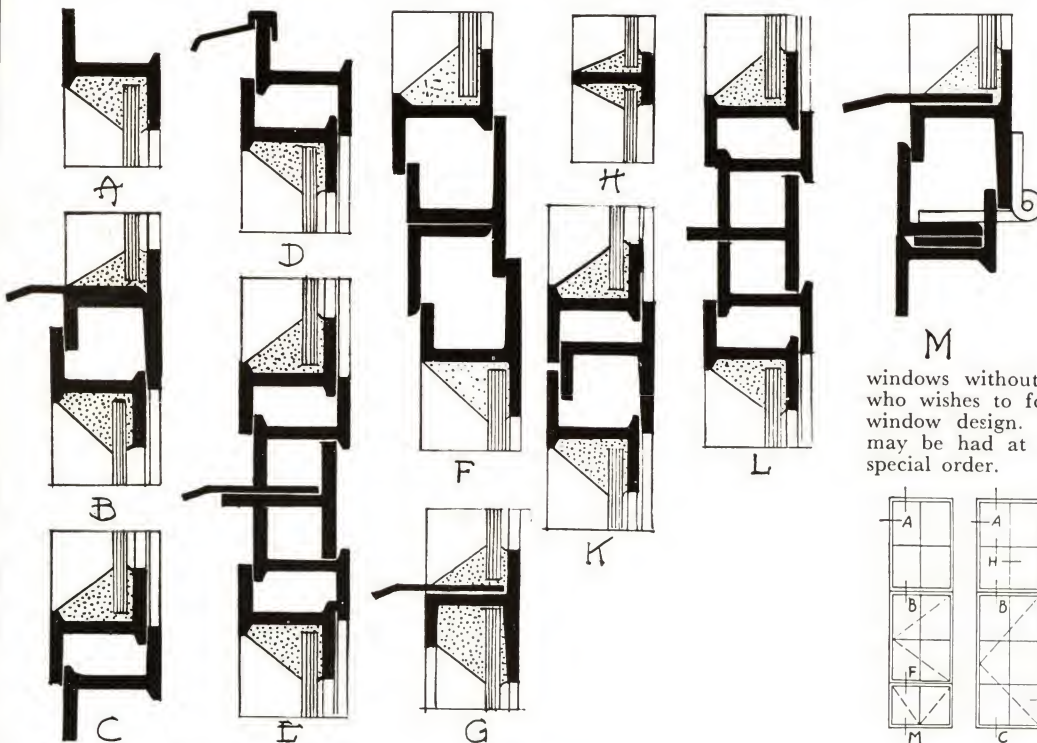
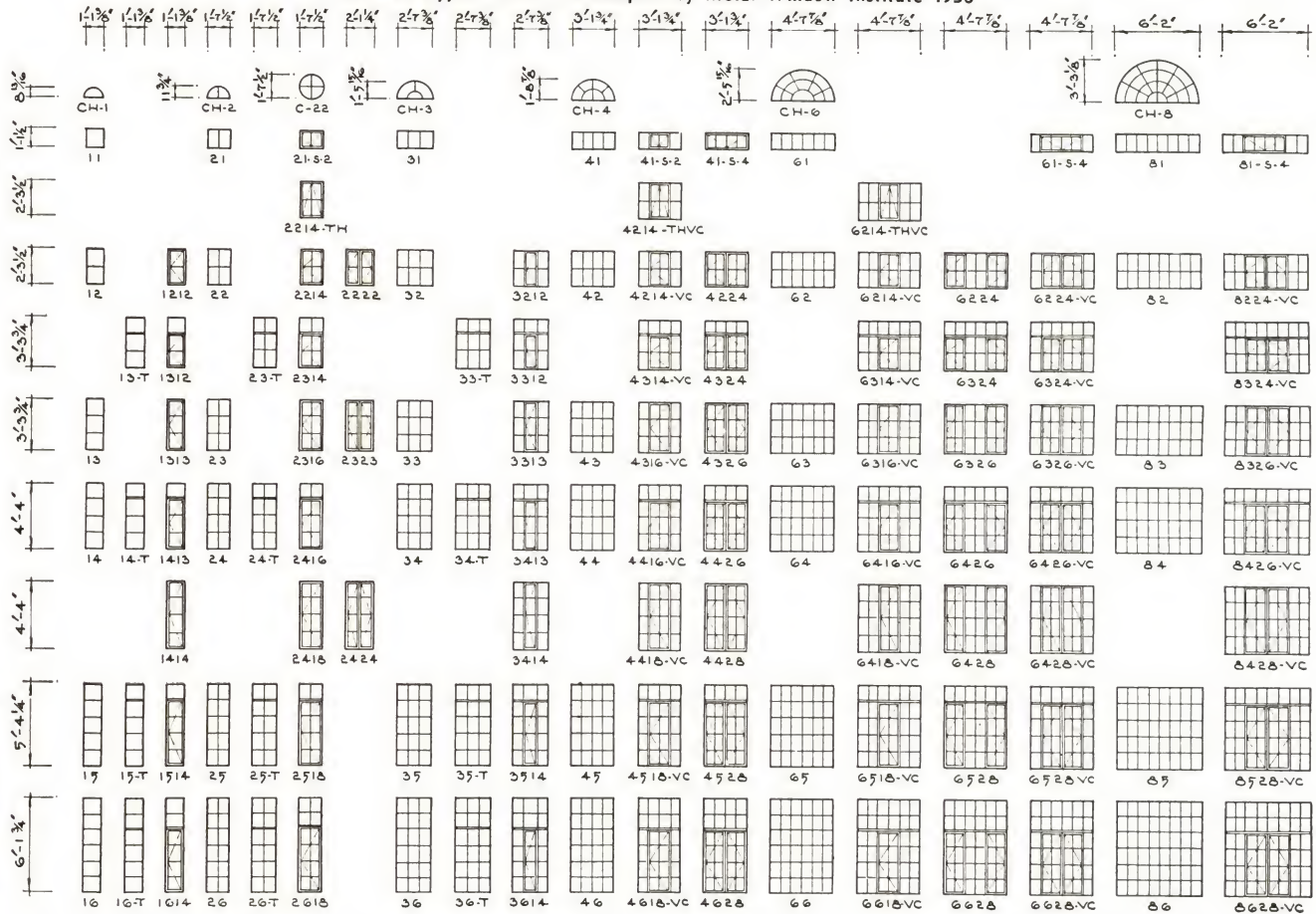


NOTES—Handles Nos. 100, 121 and 150 Worm Gear Operator Nos. 210 and 200C and Transom Stay No. 510 are furnished in solid bronze, coinage finish. Handles Nos. 7100, 7150 and 7121 and Operators Nos. 7210 and 7200C and Transom Stay No. 7510 are furnished as standard in water-rolled finish. Extension Hinge No. 8000 is made of steel.



RESIDENCE CASEMENTS
STANDARD TYPES & SECTIONAL DETAILS

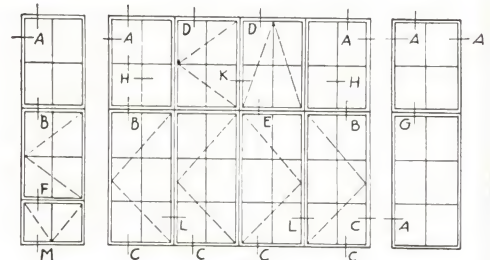
Standard Types: Sizes—As Adopted by Metal Window Institute 1938

**Combination Details—**

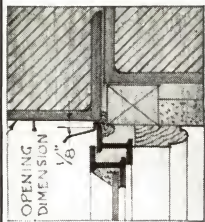
The typical elevations and details shown above are submitted to show various combinations made possible by using Ceco sections. All types are available with or without muntins.

Windows without Muntins

Muntins may be omitted in windows up to certain size. Ceco engineers have met the increasing demand for windows without muntins by the designer who wishes to follow the modern trend in window design. Special types of windows may be had at a slightly extra cost upon special order.

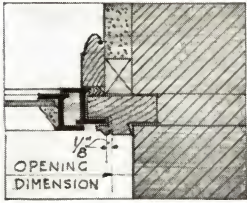


Ceco 4 **RESIDENCE CASEMENTS**
PLATE **INSTALLATION DETAILS**

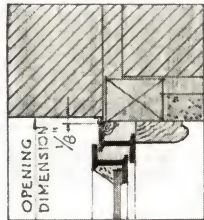


HEAD

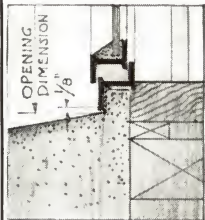
**SOLID
BRICK
DETAILS**



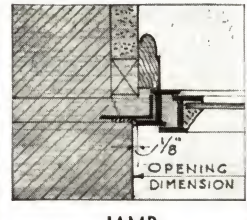
JAMB
Wood Surround



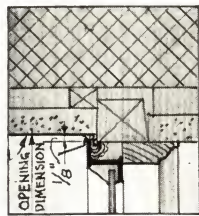
JAMB



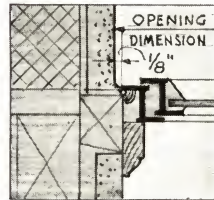
SILL



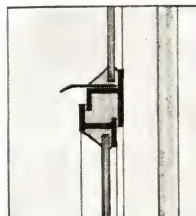
JAMB
Continuous Angle



HEAD



JAMB



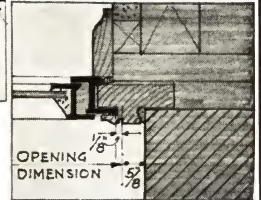
TRANSOM

**STUCCO
DETAILS**

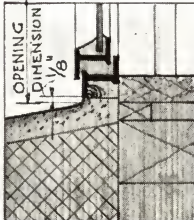


HEAD

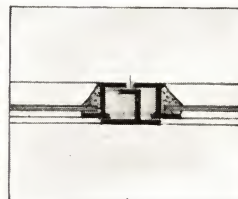
**BRICK
VENEER
DETAILS**



JAMB



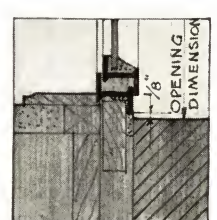
SILL



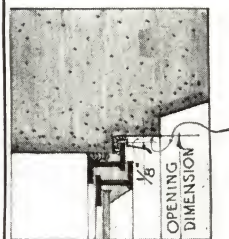
MEETING RAIL



SILL

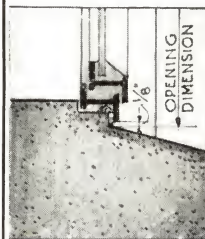


JAMB

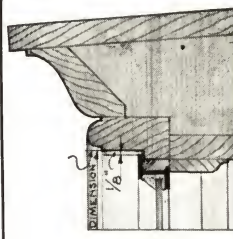


HEAD

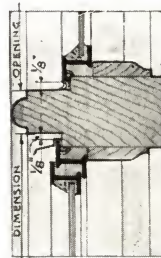
**STONE
DETAILS**



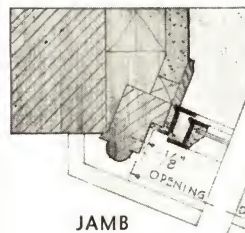
JAMB



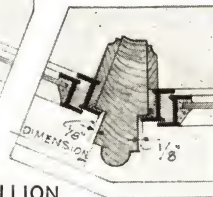
HEAD



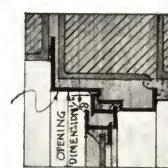
TRANSOM



JAMB

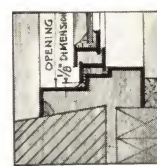


MULLION

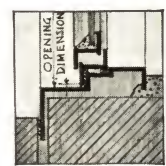


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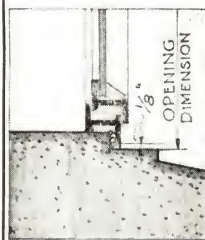
**SUBFRAME
DETAILS**



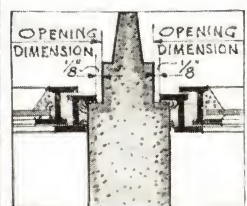
SILL



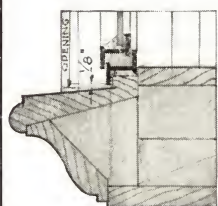
JAMB



SILL



MULLION



SILL

**WOOD
DETAILS**

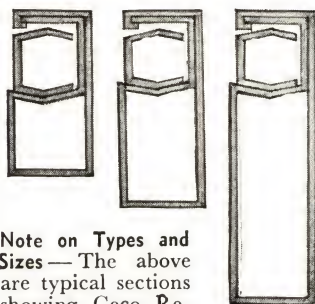


MULLION & JAMB

Ceco 5
 PLATE

METAL FRAME SCREENS CASEMENT DOORS

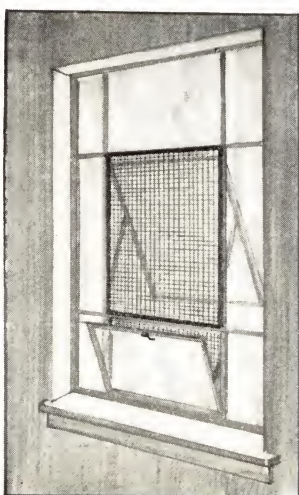
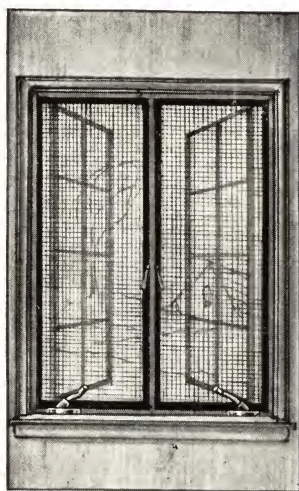
GENERAL DESCRIPTION



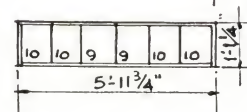
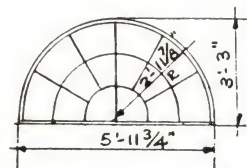
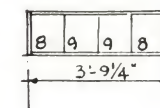
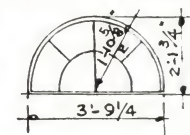
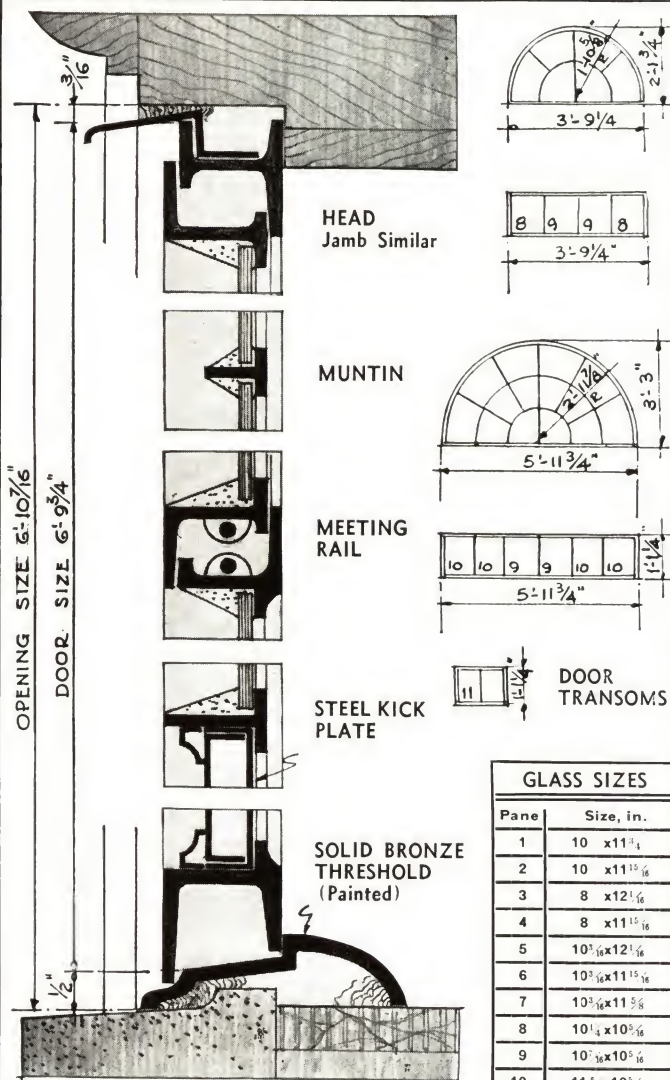
Note on Types and Sizes—The above are typical sections showing Ceco Rewirable Metal Frame Screens, which are manufactured with electro-galvanized steel, bronze, or aluminum frames. Sixteen mesh bronze or aluminum wire screen cloth is used. Ceco Metal Frame Screens are available for all types of window and door openings.

Please write for the Ceco Screen Catalog, which gives complete information on Metal Frame Insect Screens.

5/8 in. type—5/8x17/16 in.; 1 in. type—1 1/16x17/16 in.; 1 1/2 in. type—1 1/2x17/16 in.



SECTION & INSTALLATION DETAILS



GLASS SIZES

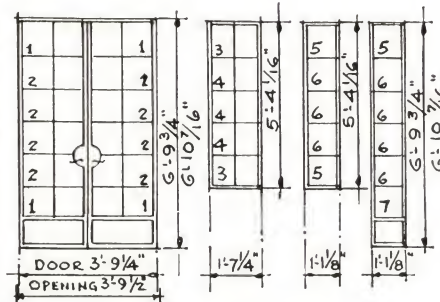
Pane	Size, in.
1	10 x 11 1/4
2	10 x 11 15/16
3	8 x 12 1/16
4	8 x 11 15/16
5	10 3/16 x 12 1/16
6	10 3/16 x 11 15/16
7	10 3/16 x 11 5/16
8	10 1/4 x 10 5/16
9	10 3/16 x 10 1/16
10	11 5/8 x 10 5/16
11	8 x 10 5/16

Shaped Planes to Template

Section—Detail above shows standard out-swinging doors. Doors swinging inward may be had on special order with double rabbeted threshold furnished. The scale of this detail is one-half of full size.

NOTE

Casement Doors are made of Intermediate Casement sections; door side lights and transoms are made of Residence Casement sections. Door muntins are arranged to line up with standard casements when used as side lights. Thresholds are not required for interior doors between rooms having the same floor level. Doors swing out only. Muntins may be omitted with the exception of those framing the lock sets. Bronze butt hinges, cylinders for mortise lock, bronze threshold, dummy lock sets for inactive leaf and panic bolt hardware will be furnished at extra cost.



DOOR AND SIDELIGHTS

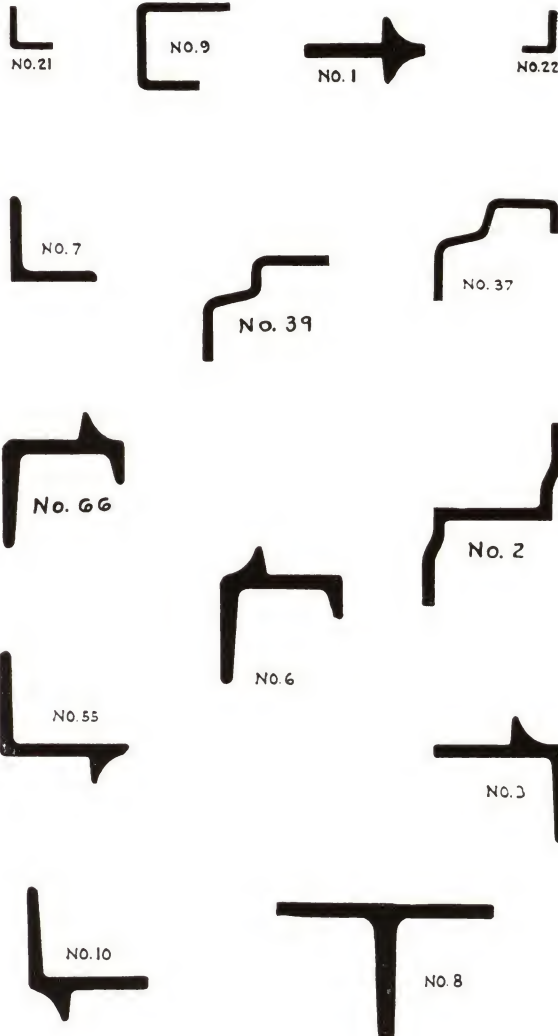
Thresholds are not required for interior doors between rooms having the same floor level. Doors swing out only. Muntins may be omitted with the exception of those framing the lock sets. Bronze butt hinges, cylinders for mortise lock, bronze threshold, dummy lock sets for inactive leaf and panic bolt hardware will be furnished at extra cost.

Ceco 6 STANDARD WINDOW SECTIONS—1/2 Size

PLATE



Ceco Architectural Projected Windows are ideally suited for all public, commercial, or institutional buildings. They are designed so that weather protection is possible when they are open. Ease of screening is made possible because ventilators either project fully toward the interior or exterior of the normal plane.



Specifications . . FOR ARCHITECTURAL PROJECTED WINDOWS

General—All windows shall be the Architectural Projected Type as manufactured by the CECO STEEL PRODUCTS CORPORATION, of Chicago, Illinois, or approved equal, as per written approval of the architect, and shall be of sizes and types as shown on architect's drawings.

Material—All sections shall be especially designed, hot-rolled, new billet steel. All frame members shall be unequal leg channel section and allow 3/4 in. continuous anchorage. Mullions shall be special rolled T Sections. Mullions and transom bars shall be Standard CECO, hot-rolled, solid steel T Sections.

Construction—Frames and ventilators shall be mortise and tenon, air-hammer riveted at all corners. After assembling, all four corners of the frame and ventilator shall be solidly welded.

Muntins shall be continuous from head to sill and from jamb to jamb and all muntins shall be interwoven and welded on the inside face of the cross-joint to increase their strength at the point of intersection. Joints at frames shall be mortise and tenon air-hammer riveted.

Ventilators shall have double contact weathering continuous around all four sides. Each ventilator shall be accurately balanced on two supporting arms of solid steel accurately riveted to the frame and ventilator and concealed when the ventilator is closed. Ventilators shall be operated by means of fully enclosed bronze friction shoes, suspended from the hinged point of the ventilator with an adjustable bolt backed by a compression spring, assuring constant friction at all times. Bronze shoes are to slide vertically in a channel guide especially adapted and applied properly to assure easy operation. All weathering members shall be securely welded to the frame and ventilator members.

Where two or more windows are placed side by side in the same opening, provide CECO Vertical Mullions. Mullions shall extend 2 in. into sills for anchorage. Where two or more windows are placed one above another in the same opening, provide CECO Horizontal Mullions. Provide mullion covers for mullions where called for on plans. Furnish necessary clips, anchors and bolts for installing the windows.

Note: Include in steel specifications punching to accommodate clips.

Hardware—All hardware shall be bronze throughout.

All ventilators opening out shall be equipped with a bronze cam lock (No. 130) and pole ring (No. 700) of standard CECO design. All ventilators opening in and within reach of the floor shall be equipped with bronze cam handle (No. 110.) All ventilators opening in and not easily accessible shall be equipped with automatic spring lock (No. 800.)

Erection—All windows shall be erected by the CECO STEEL PRODUCTS CORPORATION in openings prepared by others. All windows shall be set plumb and true, properly aligned and securely anchored before glazing. Apply unattached hardware in accordance with the manufacturer's directions.

Note: All structural work for the support of steel windows shall be provided by another contractor.

Note: Include in masonry specifications, that all mortar, grouting, pointing, etc., shall be done by the masonry contractor after the windows are erected.

Painting—All windows shall be given one coat of gray mineral paint before shipment.

Note: Include in the painting specifications that all windows should be given one additional coat after erection, but before glazing. Further painting should be deferred until at least three weeks after glazing to allow putty to set.

Note: Windows erected by the CECO STEEL PRODUCTS CORPORATION will be field painted by them if specified.

Glass and Glazing—**Note:** Glass and glazing should be furnished under glass and glazing specifications and not as part of window specifications.

All windows glazed from the inside shall be glazed with glazing angles, continuous around lights, attached with screws and hexagon nuts. Also inside putty glazed. Windows glazed from outside shall be putty glazed.

Note: Always specify glass thickness.

Glass shall be bedded and face puttied and shall be applied in a neat, cleancut, smooth manner. Putty shall be a high grade of steel window putty.

Screens—**Note:** Screens and preparation for screens are not part of the window contract, but windows can be prepared and screens furnished by the CECO STEEL PRODUCTS CORPORATION.

Note: Flat screens applied to outside of window for Projected-In ventilators, inside for the Projected-Out ventilators.

Note: Underscreen hardware (No. 550) can be furnished for Projected-Out ventilators at a slight additional cost.

Ceco
PLATE

7

ARCHITECTURAL PROJECTED WINDOWS
TYPES & SIZES
HARDWARESTANDARD TYPES AND SIZES
As Adopted by Metal Window Institute—1938STANDARD
WIDTHS

1-6 2-6 3-6 4-6 5-6 6-6 7-0

1-0 2-6 3-0 3-6

A

3-0 3-6 4-0 4-6 5-0 5-6 6-0

B

C

D

E

F

G

H

I

J

K

L

M

N

O

P

Q

R

S

T

U

V

W

X

Y

Z

AA

AB

AC

AD

AE

AF

AG

AH

AI

AJ

AK

AL

AM

AN

AO

AP

AQ

AR

AS

AT

AU

AV

AW

AX

AY

AZ

BA

BB

BC

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BJ

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BM

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BP

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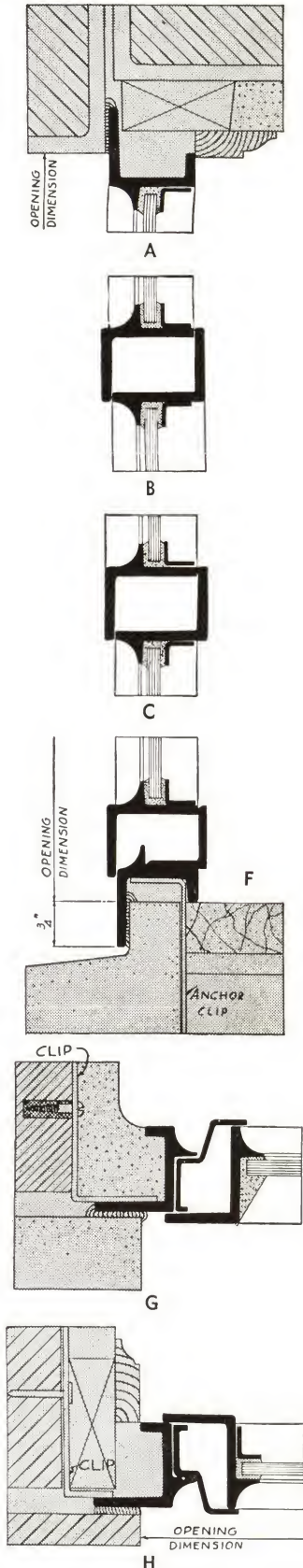
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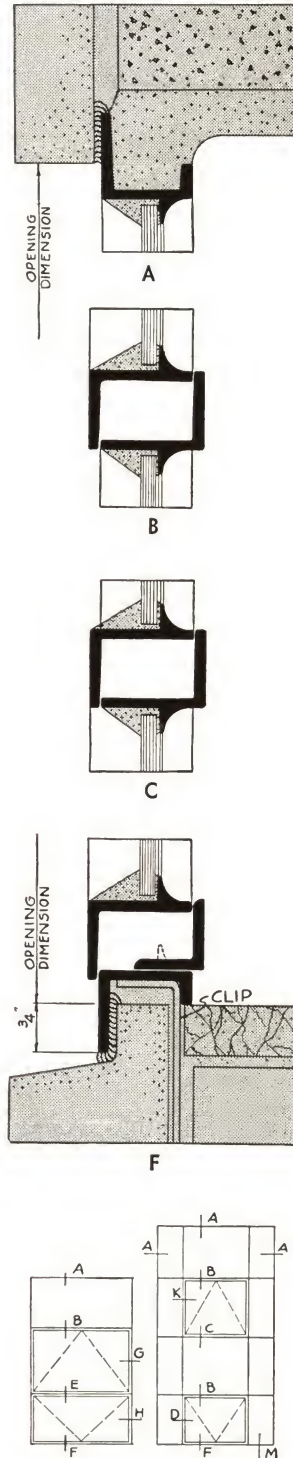
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Ceco 8 ARCHITECTURAL PROJECTED WINDOWS PLATE INSTALLATION DETAILS

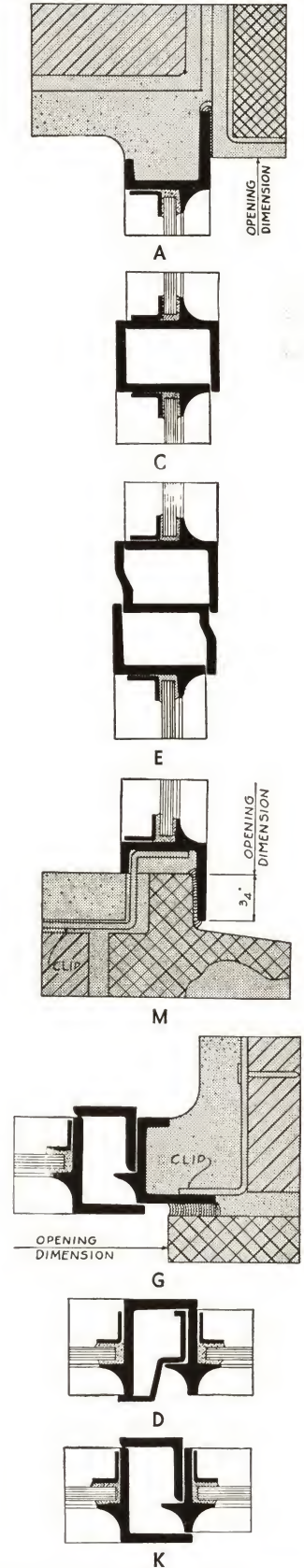
BRICK DETAILS



STONE DETAILS



TERRA COTTA DETAILS



Note on Brick—These details show the various combinations as used in the manufacture of CECO Architectural Projected Windows. Points of dimensions for sizes of openings are also shown. Caulking between window frame and building construction shall be supplied and applied by others.



Ceco Commercial Projected Windows—For use in such commercial and industrial buildings when shading and screening are very necessary. These windows are offered in a full range of Standard Types and Sizes.

Specifications FOR COMMERCIAL PROJECTED WINDOWS

General—All windows shall be the Commercial Projected Type as manufactured by the CECO STEEL PRODUCTS CORPORATION, of Chicago, Illinois, or approved equal, as per written approval of the architect, and shall be of sizes and types as shown on architect's drawings.

Material—All sections shall be especially designed, hot-rolled, new billet steel.

All frame members shall be special angle section and shall allow $\frac{3}{4}$ in. Continuous anchorage.

Muntins shall be especially rolled T sections.

Mullions and transom bars shall be standard CECO, hot-rolled, solid steel T sections.

Construction—Frames and ventilators shall be mortise and tenon, air-hammer riveted at all corners. After assembling, all four corners of the frame and ventilator shall be solidly welded.

Muntins shall be continuous from head to sill and from jamb to jamb and all muntins shall be interwoven and welded on the inside face of the cross-joint to increase their strength at the point of intersection. Joints at frames shall be mortise and tenon, air-hammer riveted.

Ventilators shall have double contact weathering continuously around entire perimeter.

Each ventilator shall be accurately balanced on two supporting arms of solid steel accurately riveted to the frame and ventilator and concealed when the ventilator is closed. Ventilators shall be operated by means of fully enclosed bronze friction shoes suspended from the hinged point of the ventilator with an adjustable bolt backed by a compression spring, assuring constant friction at all times.

Bronze shoes are to slide vertically in a channel guide especially adapted and applied properly to assure easy operation.

All weathering members shall be securely welded to the frame and ventilator members.

Where two or more windows are placed side by side in the same opening, provide CECO Vertical Mullions.

Mullions shall extend two inches into sills for anchorage.

Where two or more windows are placed one above another in the same opening, provide CECO Horizontal Mullions.

Provide mullion covers for mullions where called for on plans.

Furnish necessary clips, anchors and bolts for installing the windows.

Note: Include in steel specifications punching to accommodate clips.

Hardware—All hardware shall be bronze lacquer finish throughout.

All ventilators opening out shall be equipped with a bronze cam lock (No. 7130) and pole ring (No. 7700) of standard CECO design.

All ventilators opening in and within reach of the floor shall be equipped with bronze cam handle (No. 7110).

All ventilators opening in and not easily accessible shall be equipped with automatic spring lock (No. 7800).

Erection—All windows shall be erected by the CECO STEEL PRODUCTS CORPORATION in openings prepared by others.

All windows shall be set plumb and true, properly aligned and securely anchored before glazing.

Apply unattached hardware in accordance with the manufacturer's directions.

Note: Include in masonry specifications that all mortar, grouting, pointing, etc., shall be done by the mason contractor after the windows are erected.

Note: All structural work for the support of steel windows shall be provided by another contractor.

Painting—All windows shall be given one coat of gray mineral paint before shipment.

Note: Include in the painting specifications that all windows should be given one additional coat after erection, but before glazing. Further painting should be deferred until at least three weeks after glazing, to allow putty to set.

Note: Windows erected by the CECO STEEL PRODUCTS CORPORATION will be field painted by them if specified.

Glass and Glazing—**Note:** Glass and glazing should be furnished under glass and glazing specifications and not as part of window specifications.

All windows shall be glazed from the inside, all glass being set in a bed of putty and secured by glazing clips furnished by the window manufacturer. Face putty shall be applied in a neat, clean-cut, smooth manner.

Putty shall be a high grade of steel window putty.

Note: Specify types of glass; single strength glass is not recommended.

Note: Do not paint until putty has thoroughly hardened.

Screening—**Note:** Screens and preparation for screens are not part of the window contract, but windows can be prepared and screens furnished by the CECO STEEL PRODUCTS CORPORATION.

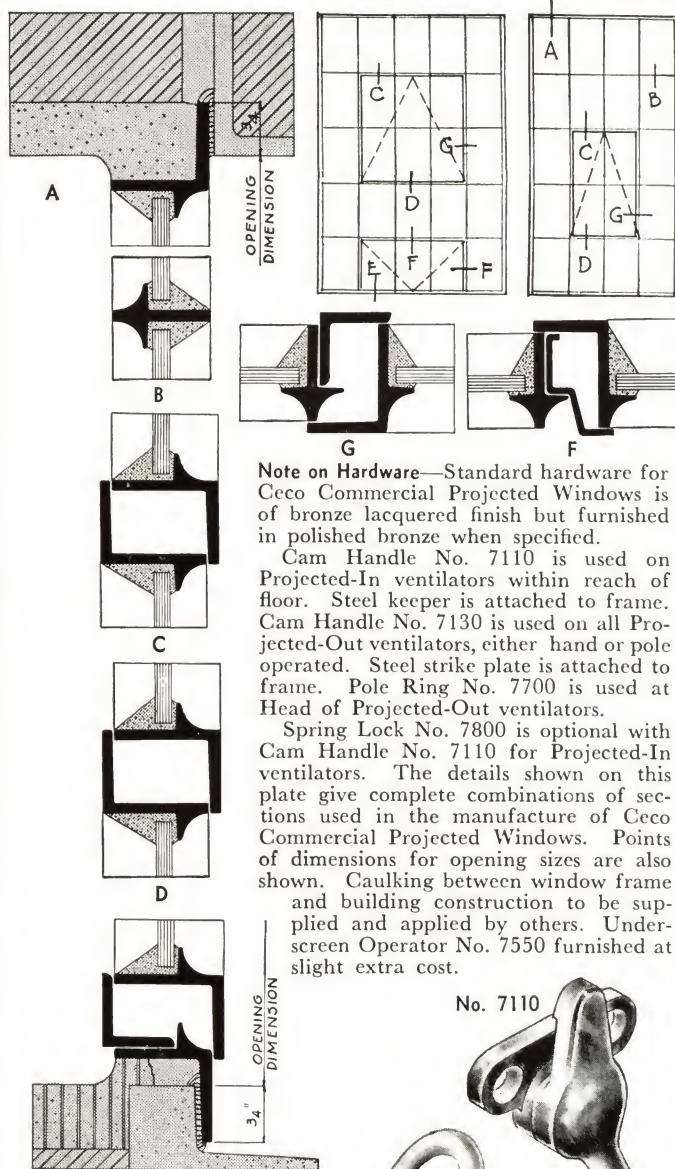
Note: Flat screens applied to the outside of window for the Projected-In ventilators and inside for the Projected-Out ventilators.

Note: Underscreen hardware (No. 7550) can be furnished for Projected-Out ventilators at a slight additional cost.

Underwriters—Underwriters' label of approval may be specified for all standard sizes shown and special sizes up to 7 ft. 0 in. in width by 12 ft. 0 in. in height. These windows must be inside angle glazed. The maximum glass size is 350 sq. in.

Ceco 9 COMMERCIAL PROJECTED WINDOWS

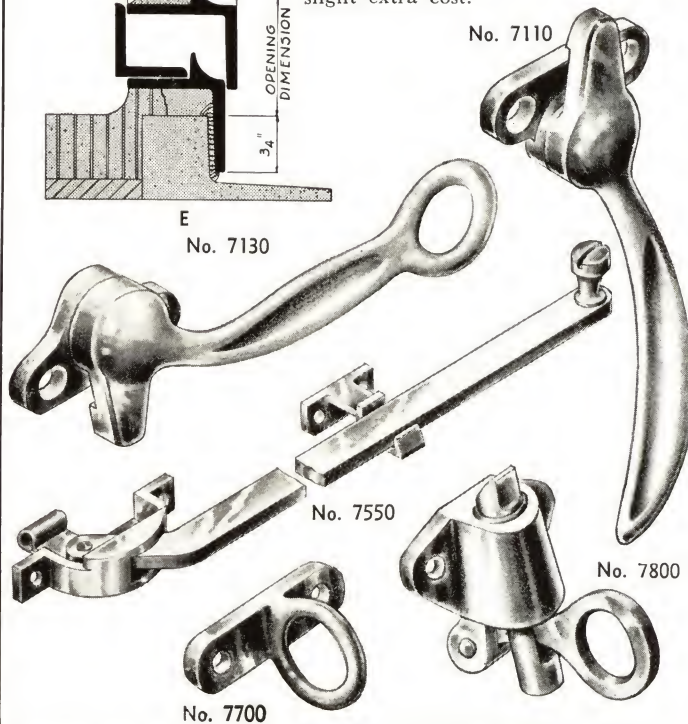
INSTALLATION DETAILS & HARDWARE



Note on Hardware—Standard hardware for Ceco Commercial Projected Windows is of bronze lacquered finish but furnished in polished bronze when specified.

Cam Handle No. 7110 is used on Projected-In ventilators within reach of floor. Steel keeper is attached to frame. Cam Handle No. 7130 is used on all Projected-Out ventilators, either hand or pole operated. Steel strike plate is attached to frame. Pole Ring No. 7700 is used at Head of Projected-Out ventilators.

Spring Lock No. 7800 is optional with Cam Handle No. 7110 for Projected-In ventilators. The details shown on this plate give complete combinations of sections used in the manufacture of Ceco Commercial Projected Windows. Points of dimensions for opening sizes are also shown. Caulking between window frame and building construction to be supplied and applied by others. Underscreen Operator No. 7550 furnished at slight extra cost.



SPECIFICATIONS FOR PIVOTED WINDOWS (Continued)

Note: Windows erected by the CECO STEEL PRODUCTS CORPORATION will be field painted by them if specified.

Glass and Glazing—Note: Glass and glazing should be furnished under glass and glazing and not as part of window specifications.

All windows shall be glazed from the inside, all glass being set in a bed of putty secured by glazing clips furnished by the window manufacturer. Face putty shall be applied in a neat, clean-cut, smooth manner.

Putty shall be a high grade of steel window putty.

Note: Specify types of glass. Single strength glass not recommended.

Note: Do not paint until putty has thoroughly hardened.

Screens—Note: Screens and preparation for screens are not part of the window contract, but windows can be prepared and screens furnished by the CECO STEEL PRODUCTS CORPORATION.

Note: Metal screens may be so arranged that the upper half of the screen is outside of the ventilator and the lower half on the inside.

Underwriters'—Underwriters' label of approval may be specified for all standard sizes shown and special sizes up to 7 ft. in width by 12 ft. in height. These windows must be inside angle glazed. The maximum glass is 350 sq. in.

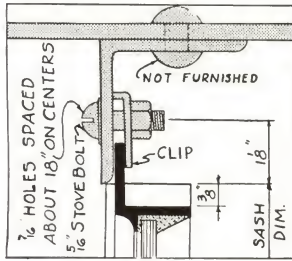
SIZES—OPENINGS, ETC.—Note on Standard Dimensions—Standard sizes and openings are shown below and by referring to height and width dimensions, sizes close to those needed can be easily ascertained. The number of units necessary to fill the opening is also given. When two or more units are placed together two inches have been added to the width dimensions as shown in the table for each mullion used.

12" x 18" Glass				14" x 20" Glass			
Widths of openings		Total Number of Units	No. of lights per Unit Position of each number indicates position of unit in opening	Total Number of Lights	Total Number of Mullions	Widths of openings	
2'	1 5/8"	1	2	2	None	2'	5 5/8"
3'	2"	1	3	3	"	3'	6 5/8"
4'	2 3/8"	1	4	4	"	4'	10 3/8"
5'	5 23/8"	1	5	5	"	6'	0 3/8"
6'	3 1/8"	1	6	6	"	7'	7 3/8"
6'	6"	2	3, 3	6	1	7'	6"
8'	6 3/8"	2	4, 4	8	1	9'	10 1/8"
9'	10"	3	3, 3, 3	9	2	11'	4"
10'	7 1/2"	3	5, 5	10	1	12'	3 3/8"
10'	10 3/8"	3	3, 4, 3	10	2	12'	6 3/8"
11'	11"	3	4, 4, 4	11	2	13'	8 3/8"
12'	10 3/8"	3	3, 4, 3	12	1	14'	8 1/4"
12'	8 1/4"	2	6, 6	11	1		
12'	11 1/8"	3	4, 4, 4	12	2	14'	11 1/8"
13'	11 1/2"	3	4, 5, 4	12	2	16'	1 1/8"
13'	11 1/2"	3	5, 5, 5	13	2	16'	1 1/8"
14'	11 3/8"	3	4, 6, 4	14	2	17'	3 3/8"
14'	11 3/8"	3	5, 4, 5	14	2	17'	3 7/8"
15'	2 3/4"	4	3, 4, 4, 3	15	2	17'	6 3/8"
16'	0 1/4"	3	5, 5, 5	15	2	18'	6 3/8"
16'	0 1/4"	3	6, 3, 6	15	2	18'	6 3/8"
17'	0 3/8"	3	5, 6, 5	16	2	19'	8 5/8"
17'	0 3/8"	4	6, 4, 6	16	2	19'	8 5/8"
17'	3 1/2"	3	4, 4, 4, 4	16	3	19'	11 3/8"
18'	1"	3	6, 6, 6	17	2	20'	11"
19'	1 3/8"	3	6, 6, 6, 6	18	2	22'	1 3/8"
19'	4 1/8"	4	3, 6, 6, 3	18	3	22'	4 1/8"
19'	4 1/8"	4	4, 5, 5, 4	18	3	22'	4 1/8"
20'	7 1/2"	5	5, 3, 3, 3, 5	19	4	23'	9 3/8"
21'	5"	4	5, 5, 5, 5	20	3	24'	9"
21'	5"	5	4, 6, 6, 4	20	3	24'	9"
21'	7 7/8"	5	4, 4, 4, 4, 4	20	4	24'	11 7/8"

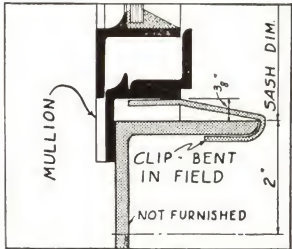
Ceco
PLATE

12 PIVOTED WINDOWS INSTALLATION & MISCELLANEOUS DETAILS

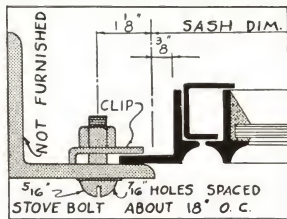
STEEL ANGLE DETAILS



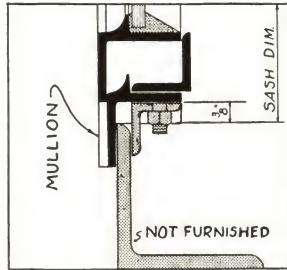
HEAD



SILL

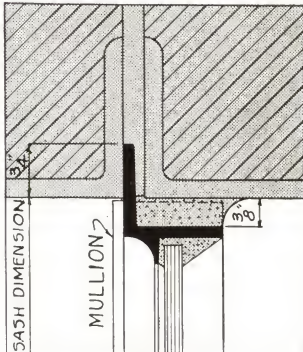


JAMB

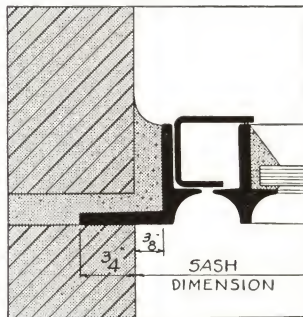


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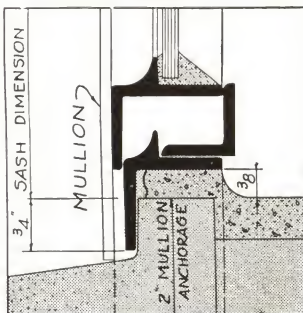
BRICK DETAILS



HEAD

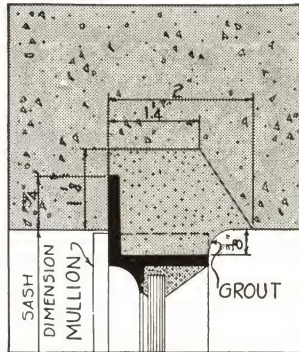


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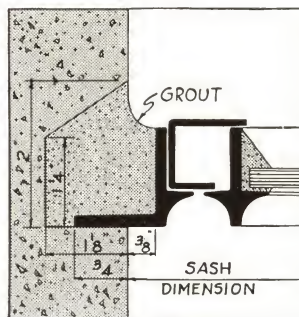


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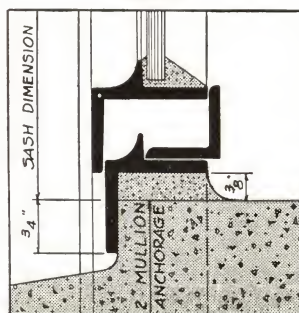
CONCRETE DETAILS



HEAD

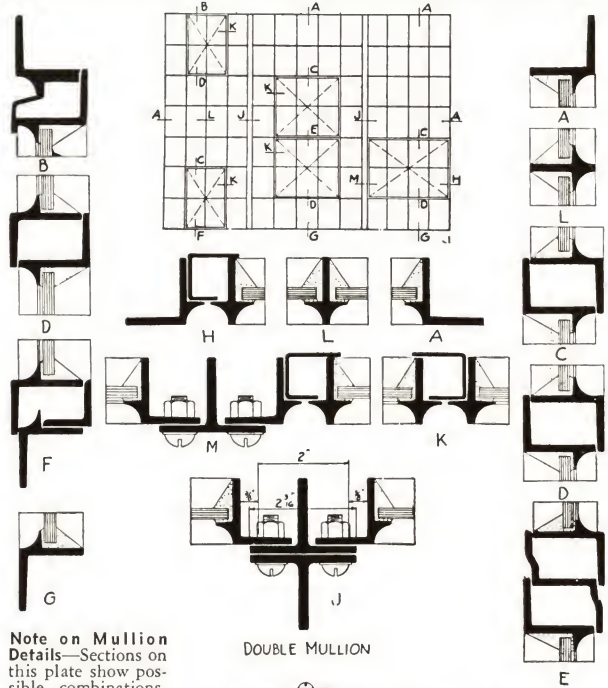


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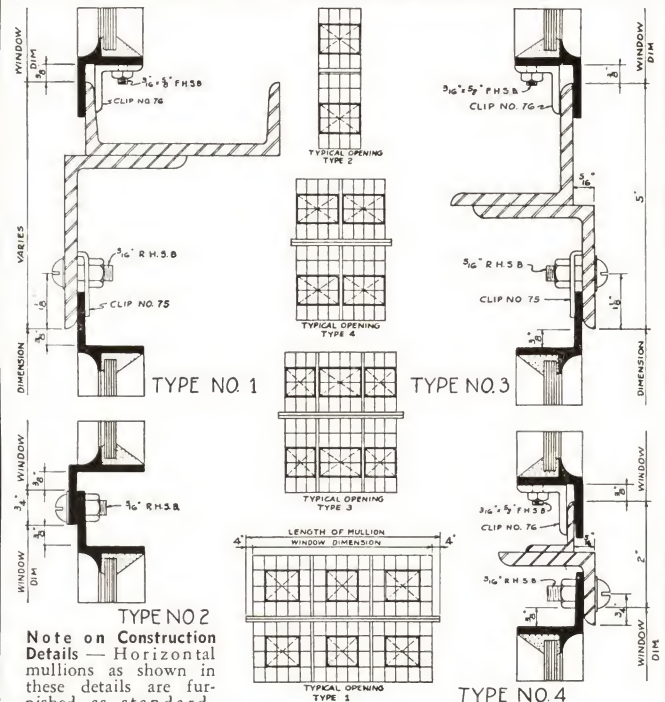
SILL

COMBINATIONS & DETAILS



Note on Mullion Details—Sections on this plate show possible combinations. Diagram at top incorporates all details obtainable. For details of horizontal mullions for large units, see plate below; for types and sizes, see pages 11 and 12. See unit schedule on page 12 for standard widths and heights. Where design requires higher openings see Horizontal mullions plate below.

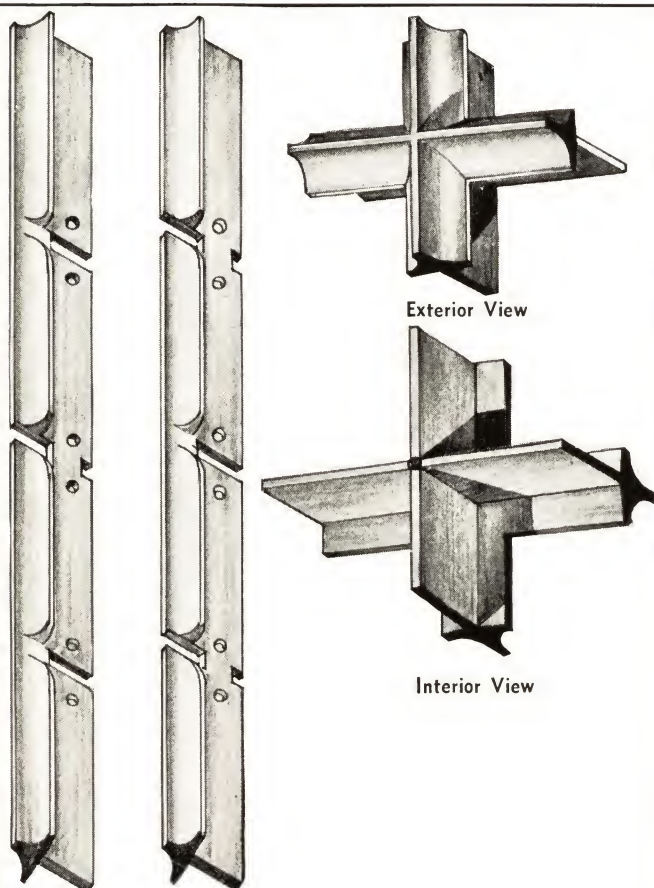
HORIZONTAL MULLION DETAILS



Note on Construction Details—Horizontal mullions as shown in these details are furnished as standard. Special designs and special types will be furnished upon specification.

Ceco
PLATE

13

PIVOTED WINDOWS
MUNTINSMUNTIN BARS
Vertical and Horizontal

THE STRONG, NEAT JOINT

The finished appearance of the CECO muntin cross joint, with all bars running uniformly and no projections to mar the straight line effect, is shown by the drawings of the interior and exterior views of the completed muntin joint.

The interior view of the joint shows where the muntin bars are welded as illustrated above.

INTERWOVEN MUNTINS—AN EXCLUSIVE FEATURE

CECO windows are noted for their strength and rigidity. This feature is worth considering, for strength is necessary to withstand shipment, to retain their shape during erection and withstand the heavy wind pressure to which steel windows are often subjected.

How Extra Strength and Rigidity Are Secured—The drawings on this page show how the bars are cut. Note that the cuts alternate, first in the web of the muntin and then in the face. The cut in the horizontal bar is an opposite cut to the one in the vertical bar. This plan is carried out throughout the bars.

The method of joining the bars is to force the muntins together, and the bars are woven through to form a basket weave, one bar pressing against the other.

Every Muntin Joint Is Welded—After the window has been assembled, each cross muntin joint is welded. This process delivers practically a one-piece window because each bar is rigidly tied to the other.

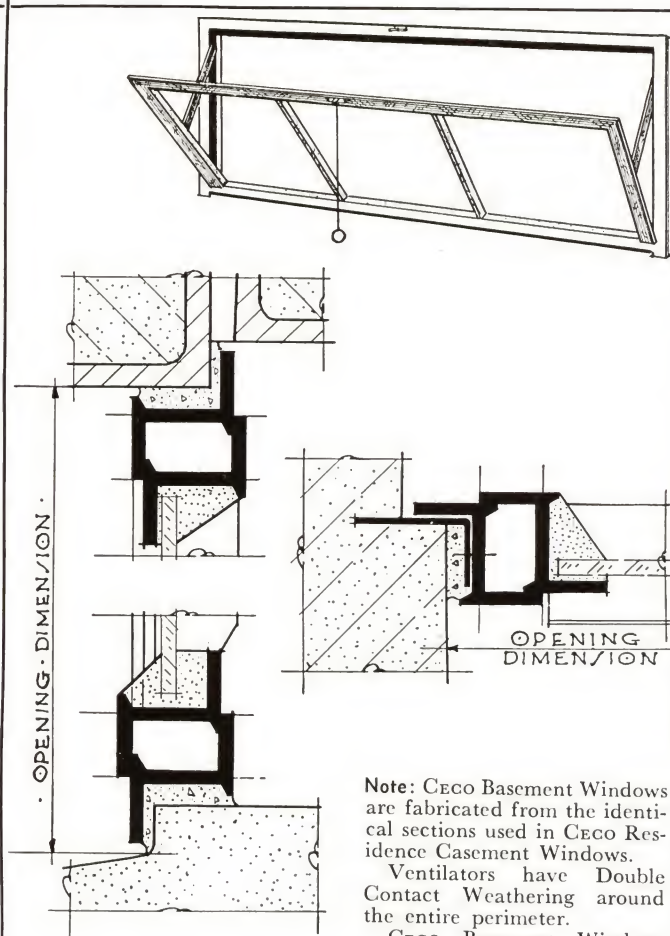
Muntin bars are riveted to frame by air riveting.

All bars are cut and punched in one operation on large multiple punch presses. Each bar is identical as to location of notches in the bars, so that each window is always true to size and shape.

Each unit is carefully inspected by placing the window in a specially designed frame. Ventilator is fitted and inspected to insure a weather-tight yet easily operated ventilator.

Ceco
PLATE

14

BASEMENT WINDOWS
DETAILS & DESCRIPTION

Note: CECO Basement Windows are fabricated from the identical sections used in CECO Residence Casement Windows.

Ventilators have Double Contact Weathering around the entire perimeter.

CECO Basement Windows can be furnished either to open

in from top or open in at bottom.

Ventilators can be partly opened for indirect ventilation or can be completely opened for full ventilation.

The ventilator can be easily removed for glazing if so desired or can be glazed in the wall.

This window can be furnished of either puttyless or putty glazed type.

The ventilator is held securely in position by two side arms securely riveted to frame, and can be easily operated from the floor due to the rod attachment to the locking device.

CECO Basement Windows are furnished complete with all necessary hardware and glazing clips. No glass is included.

Sizes	Masonry Opening in Size		
	Glass Size	Width	Height
3 Lights	10" x 12"	2' 9 1/8"	x 1' 3"
2 Lights	14" x 20"	2' 6 3/4"	x 1' 11"
3 Lights	10" x 20"	2' 9 1/8"	x 1' 11"
3 Lights	12" x 18"	3' 3 1/8"	x 1' 9"

CECO also furnishes a less expensive Basement Window to meet the requirements where circumstances demand a combination of excellent service and rigid economy.

CECO Tee Bar Windows are manufactured from solid steel sections.

The frame bar is one piece with corners mitered, which makes a very rigid frame.

The ventilators are hinged at the frame. Effective weathering is secured by the use of flat sections and formed drip at sill of sash.

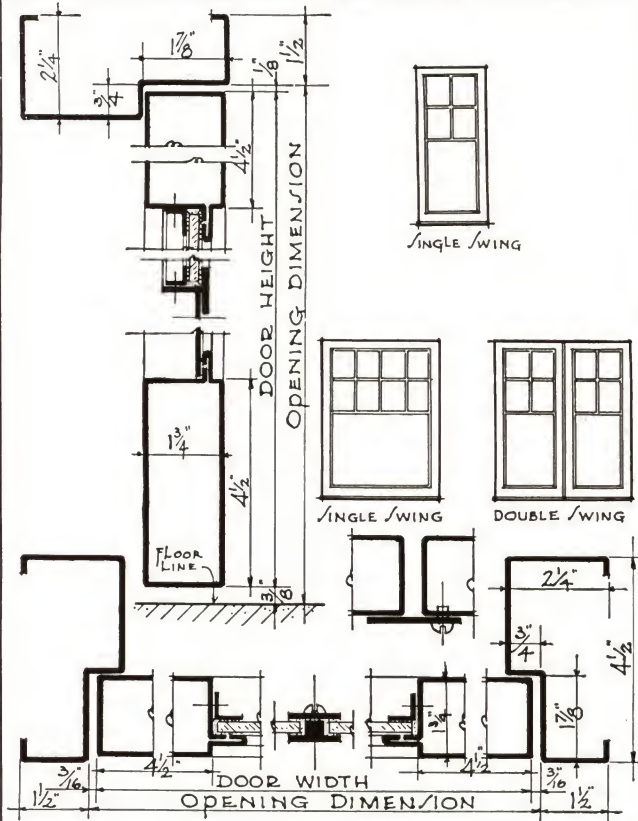
CECO Tee Bar Basement Windows are furnished complete with hinges, locking device and glazing clips. No glass is included.

Size	Glass Size		
	Glass Size	Width	Height
3 Lights	10" x 12"	2' 8 5/8"	x 1' 2"
2 Lights	14" x 20"	2' 6 1/4"	x 1' 10"
3 Lights	10" x 20"	2' 8 5/8"	x 1' 10"
3 Lights	12" x 18"	3' 2 5/8"	x 1' 8"

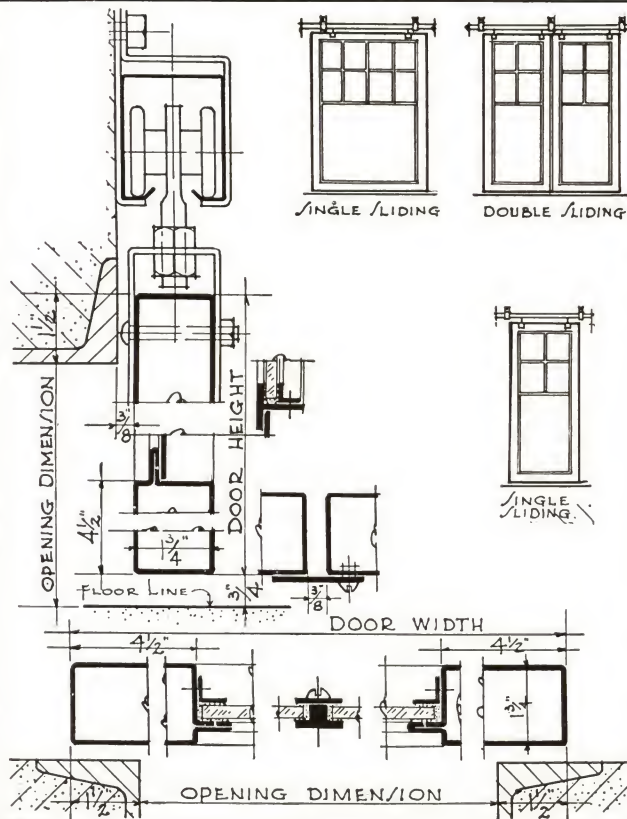
Ceco 15 INDUSTRIAL STEEL DOORS

PLATE

SWING TYPE DOORS



SLIDE TYPE DOORS



Specifications FOR INDUSTRIAL STEEL DOORS

General—All doors shall be the industrial type as manufactured by the CECO STEEL PRODUCTS CORPORATION, of Chicago, Illinois, or approved equal as per written approval of the architect, and shall be of sizes and types as shown on architect's drawings.

Material—The stiles and rails shall be 14 gauge sheet steel to be formed and welded into 1 3/4 in. by 4 1/2 in. tubes.

Muntins and astragals shall be solid rolled steel sections.

Lower panels to be 14 gauge sheet steel.

Sash panels shall be an integral part of the door leaf, securely welded to the door rail.

Construction—Door corners shall be mitered and joints shall be welded around the entire mitre and ground smooth.

Steel panels shall be spot welded to stiles and rails.

The upper portion of the door shall be fitted with a sash panel, all members of which shall be welded in place. The glass shall be held in place with putty and metal strips.

All double doors shall have astragals, rigidly attached to active leaf.

Doors shall be reinforced where required to eliminate any racking or sagging.

Hardware—Swing Doors—Supply Half Surface, Steel Hinges.

Note: Two Hinges for each leaf are supplied for all doors up to 8 ft. high. For Doors higher than 8 ft., three hinges are supplied.

Steel Hasps and Staples shall be supplied as standard on all Single and Double Swing Doors.

Note: Mortise cylinder locks, master-keyed if desired, may be had at extra cost.

One Steel Chain Bolt and one Foot Bolt shall be supplied on the inactive leaf of each double swing door.

Sliding doors—Pressed steel clevises shall be supplied for attachment at upper reinforced corners to accommodate trolley hangers.

Supply Steel Safety Hasp for attachment to each active leaf with staple for inactive leaf or door frame.

Note: We do not supply padlocks.

Supply two Steel Pulls for attachment one on either side of each sliding door leaf.

Supply standard deep channel tracks, balanced and supported on 2 ft. centers by U-shaped track brackets of heavy gauge steel. Supply heavy duty four wheel roller bearing trolleys with adjustable trolley hangers for attachment to clevises.

Guides—Shall be solid rolled steel angles with flaring edges. Center stops on double sliding doors shall be malleable iron castings.

Door Frames—Door frames shall be 14 gauge steel formed into specially designed 1 1/2 in x 4 in. channels with self-contained rebate.

All door frames shall extend 2 in. below the finished floor line for anchorage.

All door frames shall be anchored to structural steel or shall be equipped with adjustable corrugated steel anchors placed approximately 36 in. apart and extending into the masonry.

Erection—**Note:** The Ceco Steel Products Corporation will erect doors and frames if called for in specifications.

Painting—The manufacturer shall give all doors and frames one coat of gray mineral paint before shipment.

Note: Include in the Painting Specifications that all doors and frames should be given one additional coat after erection.

Note: Doors erected by the Ceco Steel Products Corporation will be field painted by them if specified.

Note: Caulking shall be furnished and applied under caulking specifications and not as part of door specifications.

Glass and Glazing—**Note:** Glass and glazing shall be furnished under glass and glazing specifications and not as part of door specifications.

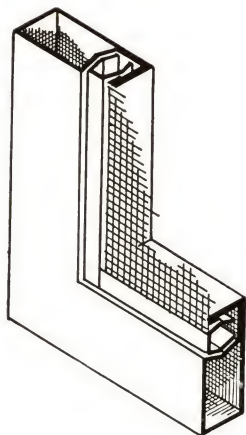
Glass shall be 1/4 in. rough wire, 1/4 in. factory ribbed.

Note: 1/4 in. glass is recommended. Single or double strength glass should not be used. Glass is not furnished by the CECO STEEL PRODUCTS CORPORATION.

Putty shall be a high grade of steel window putty.

All glass shall be set in a bed of putty and held in place by metal strips.

Ceco COMMERCIAL AND ARCHITECTURAL WINDOW SCREENS



Note on Types and Sizes

Illustrated is a typical section of the CECO Rewirable Metal Frame Screen line. CECO Metal Frame Screens are available for all types of window and door openings.

Please write for the CECO Screen Catalog, which gives complete information on Metal Frame Insect Screens.

CECO Steel Frame Members:

- CECO Light Weight
 $\frac{7}{16}$ " x $\frac{5}{8}$ " cold rolled electro-galvanized steel .032 thick.
- CECO Intermediate
 $\frac{7}{16}$ " x 1" cold rolled electro-galvanized steel .032 thick.
- CECO Heavy Duty
 $\frac{7}{16}$ " x $1\frac{1}{2}$ " cold rolled electro-galvanized steel .032 thick.

Ceco SCREEN CONSTRUCTION

Steel:

Joints all welded, forming frame into one complete unit.

Spline:

Cold rolled electro-galvanized steel .028 thick.

Screen Cloth:

Bronze Antique Finish
Copper Antique Finish
Aluminum Natural Finish
Aluminum Dark Finish
Stainless Steel Natural Finish

16 mesh cloth furnished as a standard .0113 in. diameter*

*Screen cloth of .015 in. diameter 16 mesh and 18 mesh .0113 in. diameter is carried as a stock item; cloth of other materials and finer mesh can be furnished when desired.

Hardware:

Various types to meet specific job requirements.

Fittings:

All clips, bolts, etc., cadmium plated.

Cross Braces:

Rewirable type $\frac{7}{16}$ " x $1\frac{1}{16}$ " electro-galvanized steel .032 thick welded into frame.

Finish:

Two coats of best baking enamel of color selected, baked $1\frac{1}{2}$ to 2 hours at 300°.

A FULL LINE OF WINDOW SCREENS WITH DISTINCTIVE CONSTRUCTION FEATURES

Many architects and responsible builders know that the CECO line of Metal Frame Screens represents the product of specialists—of an organization versed in architectural engineering and possessing ample manufacturing facilities of the most modern type. Behind the CECO line there is also a nation-wide service by factory representatives for technical consultation and installation.

The CECO line comprises a complete selection of rolled tubular and extruded metal frames that fully anticipates the demand for an individual type of screen for each type of opening . . . taking into consideration the elements of effectiveness, convenience and appearance, as well as the cost of installation warranted for the particular project.

Architectural harmony demands that screen installations, whether on the inside or outside of openings, should be inconspicuous to avoid detracting from the character or design of the building. CECO Metal Frames meet this requirement in an unusual degree simply because they represent the combined product of architectural skill and the science of engineering.

All CECO frames occupy the safest minimum of space, which contributes not only to neatness of appearance and the need for strength but also to a maximum of ventilation and vision. Yet another important factor in the CECO frame designs is lightness of weight for easy handling when the seasons require movement of screens between service and storage.

Only the highest grades of steel, copper, bronze, and aluminum are used for these screens.

Durability is all important for the economy of long, trouble-free service.

CECO steel frames are made of a superior, rust-resisting, copper bearing steel, processed by electro-galvanizing and finished with the best grade of baked-on enamel for extra protection.

CECO bronze frames are made from a commercial bronze alloy containing not less than 90% copper and having all the rust-resisting qualities of copper with 50% more strength than copper.

CECO aluminum frames are constructed from a specially developed alloy which furnishes a frame of exceptional tensile strength and rigidity combined with lightness of weight. This type of frame is available in either extruded or rolled tubular sections.

CECO accessories are furnished to meet every requirement in screening. These are manufactured from the same metals and with the same care that go into the production of CECO Metal Frame Screens.

CECO Bronze Frame Members:

Bronze frame screens are constructed similar to steel, using bronze material throughout. Sizes and thickness of frame are as described under "Steel."

Finish:

Natural or Statuary.

CECO Aluminum Extruded Frame Members:

Aluminum frame screens are furnished in the same frame sizes as steel and bronze, .0625 ($\frac{1}{16}$ ") with .125 ($\frac{1}{8}$ ") cross web.

Finish:

Satin Brush finish.

CECO METAL FRAME SCREEN DOORS:

Steel, Bronze, or Aluminum frame Screen Doors are available in many types and designs to meet specific requirements. Standard hardware is furnished as regular equipment.

Grilles and special hardware furnished when specified.

CECO Screen Doors are constructed with removable and rewirable screen panels.

CECO PORCH SCREENS:

Metal Frame Screens in many designs and styles for covered porches and open terraces.

SUGGESTED Specifications . . .

Metal Insect Screens shall be of . . .

- (a) Electro-galvanized steel frame
- (b) Bronze frame
- (c) Extruded Aluminum frame construction

as manufactured by the CECO STEEL PRODUCTS CORPORATION.

All screen frames shall be of the rewirable type. Frame shall be at least $\frac{1}{8}$ " x 1". Screens more than 6 ft. in length, or containing more than 20 sq. ft. in area, shall have frames not less than $\frac{1}{8}$ " x 1½". Cross braces shall be $\frac{1}{8}$ " x 1" and rewirable.

Screen cloth shall be held in groove in frame member with suitable spline held in place without the use of screws or rivets. Spline to be readily removed and replaced without distorting the spline or frame, and without cutting the wire cloth.

Corners shall be electrically welded and all joints ground to a smooth finish.

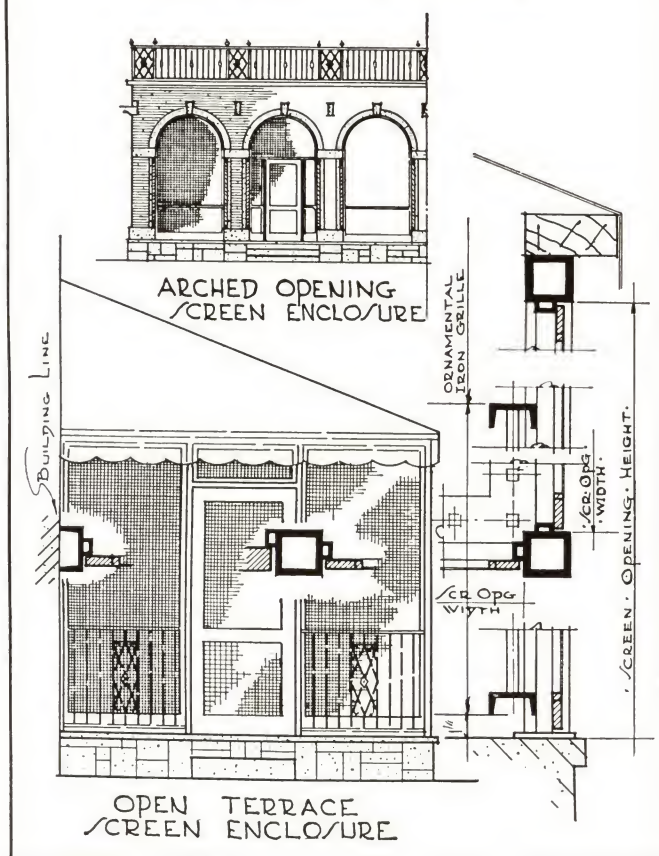
All hardware shall be cadmium plated, or of solid brass or bronze.

FINISH—Screen frames shall be chemically cleaned so that all surfaces are free from oil or other sediment. Steel Frame Screens shall be finished with two coats of baked-on enamel (baked at least 1½ hours each coat) of a color to harmonize with the standing finish of sash. The Architect shall direct the painting contractor to furnish the screen contractor with sample of color selected. Bronze Frame Screens shall have natural or statuary finish. Aluminum Frame Screens shall be natural or wire brushed to a satin finish.

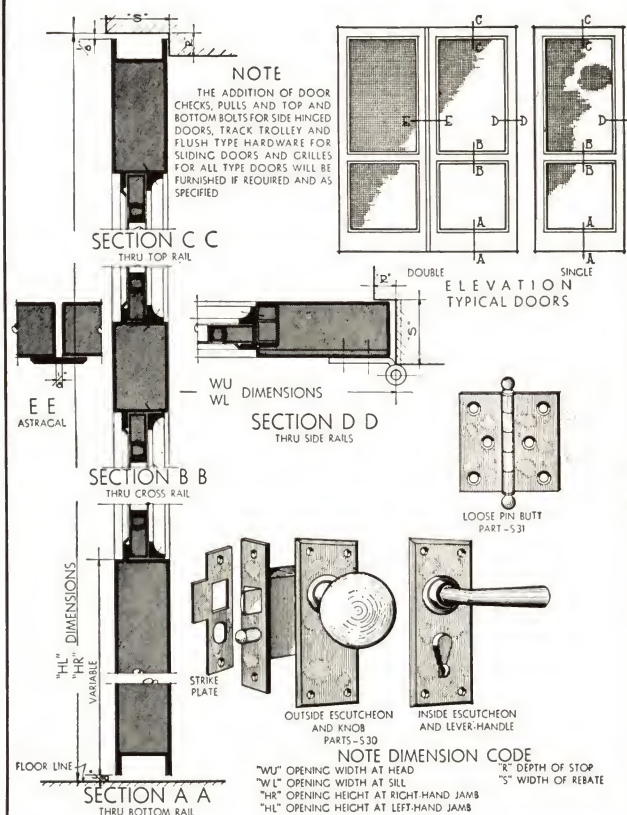
Numbering: Duplicate suitable numbers shall be placed on screens and on window openings.

Accessories: Whether definitely specified or not, all screens are furnished complete with the necessary accessories for convenient attachment and operation. Accessories include identification numbers (on screen and window), guides, pivots, handles, lifts, springs, and so forth. The Architect should specify any out-of-the-ordinary conditions that are to be met, requiring special or additional accessories. Shop drawings and samples will be submitted for approval when necessary.

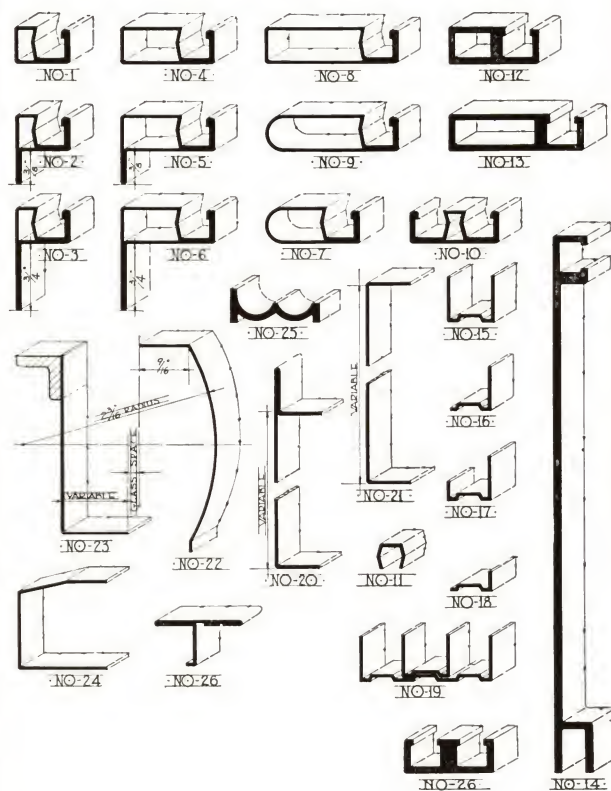
PORCH SCREENING METHODS



CUSTOM BUILT SCREEN DOORS STANDARD DETAILS—HARDWARE

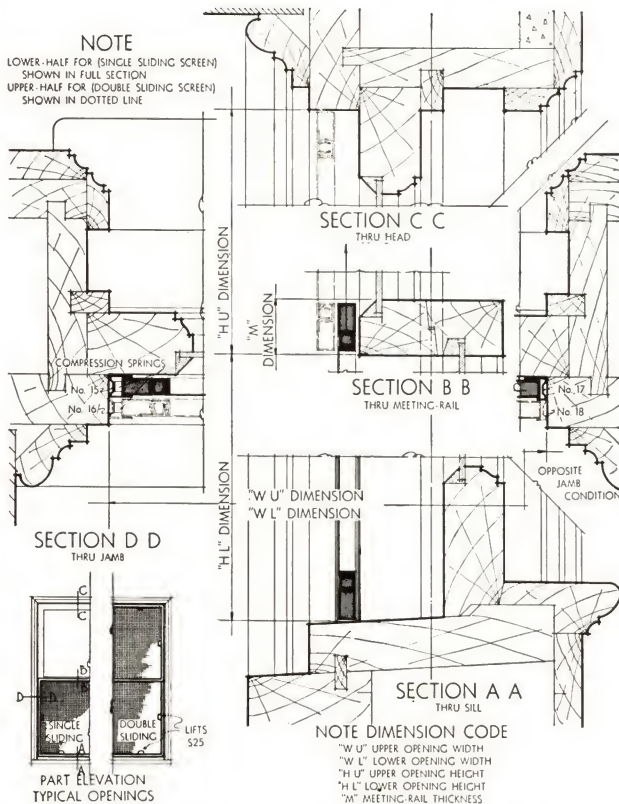


STANDARD SCREEN SHAPES

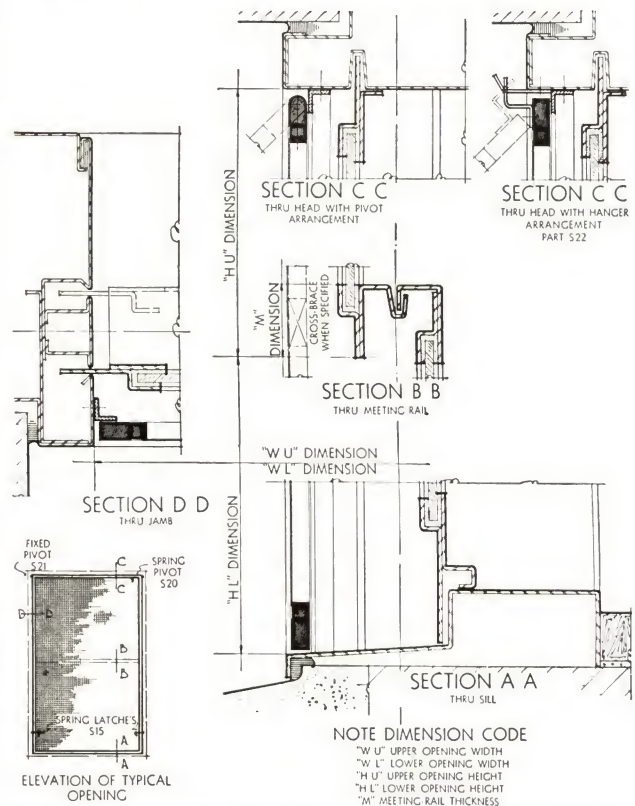


Ceco SINGLE & DOUBLE VERTICAL SLIDING SCREEN FOR DOUBLE-HUNG WOOD WINDOW

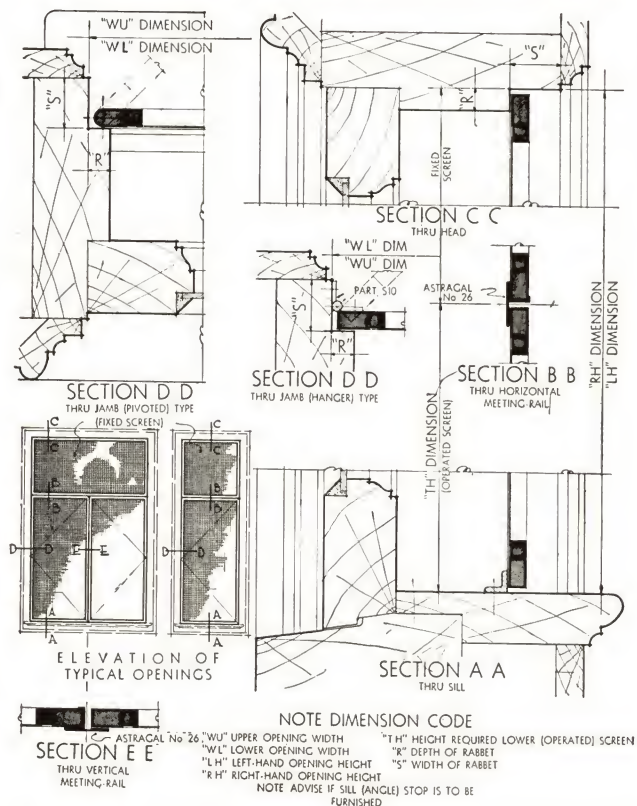
NOTE
LOWER-HALF FOR (SINGLE SLIDING SCREEN)
SHOWN IN FULL SECTION
UPPER-HALF FOR (DOUBLE SLIDING SCREEN)
SHOWN IN DOTTED LINE



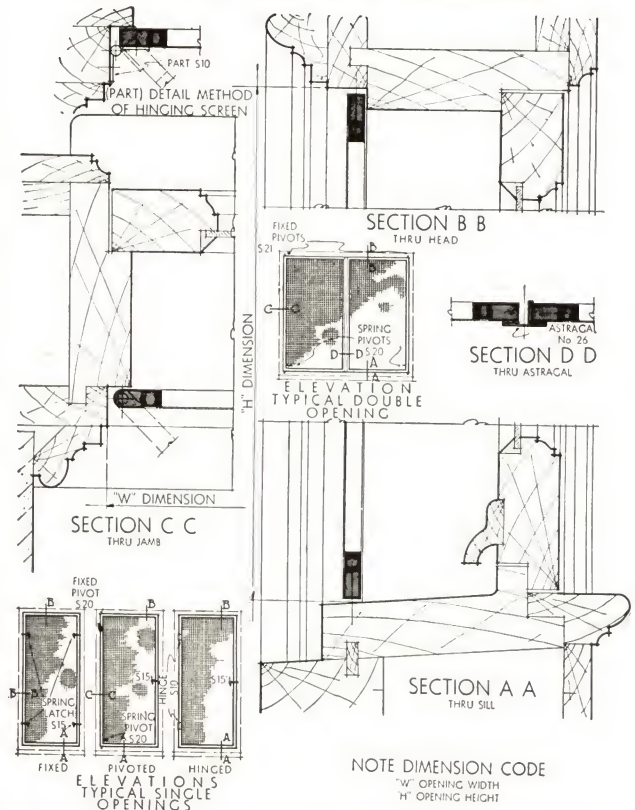
Ceco TOP-HUNG (PIVOTED & HANGER TYPE) SCREEN FOR DOUBLE-HUNG STEEL WINDOW



Ceco INSIDE PIVOTED OR HINGED SCREENS FOR CASEMENTS OR DOUBLE-HUNG WINDOW

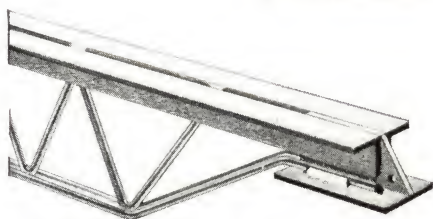


Ceco FIXED PIVOTED & HINGED SCREENS FOR WOOD (SWING-IN) CASEMENTS



CECO STEEL JOISTS . . .

STANDARD



CECO Open Web Steel Joists provide a light, easily erected floor system that conceals all sanitary, lighting and heating systems.

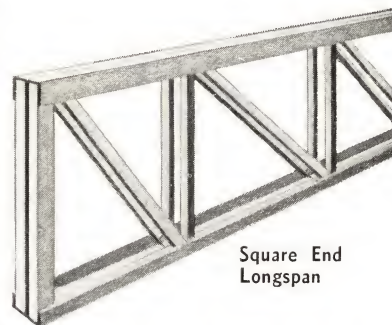
CECO Joists are shop fabricated of rolled steel sections into the form of a Warren Truss by the shielded arc welding process. Underslung ends allow required head room with minimum floor thickness.

The Top Flange, as wide as consistent with good design, provides greater lateral rigidity and increases efficiency of centering material and floor slab by reducing clear span between joists. The Bottom Chord, a tension member made of two round bars, permits easy, positive attachment of ceiling lath by standard tie wires or CECO Hairpin Type Clips. Round bars allow less contact with plaster, permit free air circulation, and eliminate ceiling streaking at contact point. Individual bearing plates are welded on each end. Separation of chord members permits easy attachment of special type floors or ceilings.

without using additional purlins. Depths of 18 in. to 32 in. make it possible to construct additional floors over auditoriums or gymnasiums without waste space between floors. One-story garages or factories often can be constructed without columns.

The accompanying illustration shows how CECO Longspans are made with a box section, vertical legs of chord angles outside, and all web members double angle sections. Steel Joists are often subjected to greater strain when handling and erecting than when in use, this construction insures delivery in good condition. Joists are bridged by angle cross bracing bolted at intervals of not over 10 ft. Holes are provided for attaching nailers and for structural steel connections.

CECO Longspans are made with square or underslung ends. On the square-end type the top chord can be sloped in one or both directions from center for roof drainage. All connections are made by the shielded arc welding process.



Square End
Longspan

NAILER JOISTS

CECO Nailer Joists are similar to CECO Standard Joists with the addition of a 2 x 3 wood nailer attached to the Top Chord for direct application of wood floors or roofs. Larger clear openings may be spanned with nailer joists, thus eliminating columns. This is advantageous in home construction where basements are put to many living uses. For greater load-carrying capacity than CECO Nailer Joists provide, wood nailers can be attached to standard steel joists.

LONGSPAN

CECO Longspan Joists span clean openings up to 64 ft. 0 in. spaced to permit application of floor or roof deck directly to joists



OTHER CECO PRODUCTS

CECO METAL LATHING MATERIAL

Includes expanded metal lath, rib lath, strip lath, all types of corner bead, base bead and picture mould, expansion flashing, hot and cold rolled furring channels, pencil rods, angles, tees, flats, tie wire, and accessories.

MEYER STEELFORM CONSTRUCTION

A standard system representing the highest type of concrete joist floor construction. Heavy gauge removable steelforms are used to form a floor construction of reinforced concrete joists and a thin concrete slab. Metal lath furring may be used beneath to provide a flat ceiling for plastering. Meyer Steelforms are handled on a rental basis only. Labor of installation and removal of steelforms by our skilled workmen may be included with the rental charge. Economy of the rental plan is apparent.



Meyer
Steelforms

WIRE FABRIC REINFORCEMENT

CECO Electrically Welded and Triangle Fabric consisting of cold drawn wires welded or woven to form a closely spaced mesh of square, rectangular or triangular shape is well adapted for many uses as tension reinforcement for concrete. CECO fabric is ideal for reinforcing roads, pavements, sidewalks, driveways, concrete pipe, reservoirs and concrete floors.

CECO REINFORCING BARS

CECO Bars are rolled from new billet steel and furnished as plain rounds or deformed rounds and squares. They can be furnished cut to length and bent, or in stock lengths. Reinforcing bars re-rolled from steel rails are also available.

CECO METAL WEATHERSTRIPS

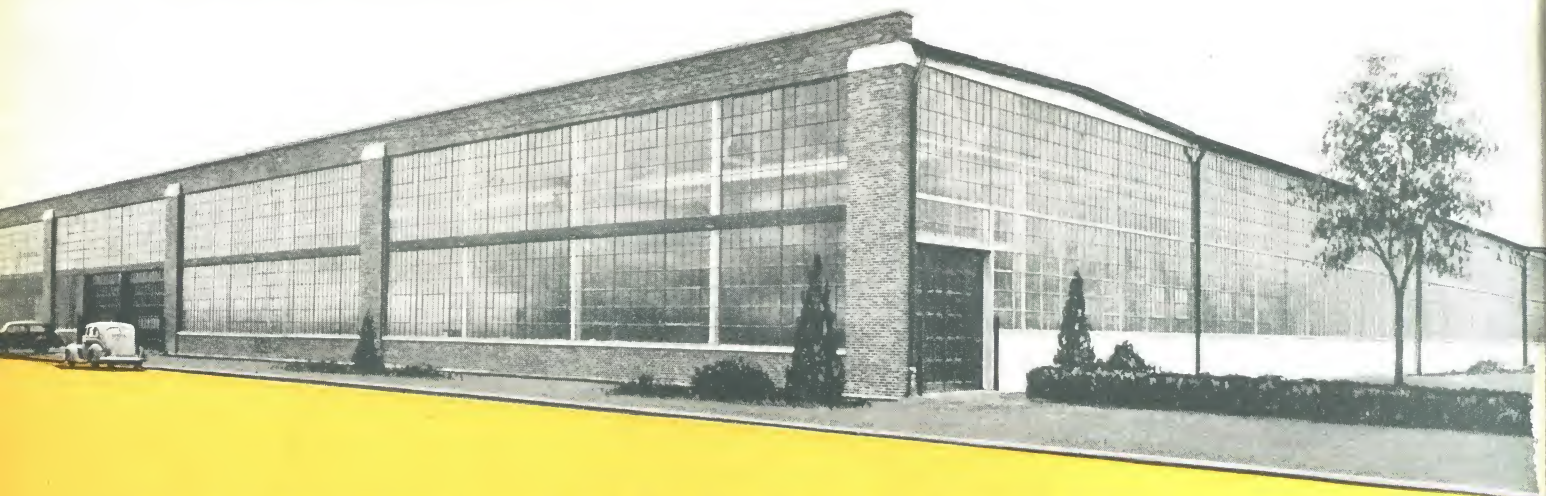
CECO offers a complete line of metal weatherstrip products for all standard or special weatherstripping conditions. CECO Weatherstrips offer many important, new advantages in design and operation. Proper weatherstrip installations are assured regardless of warpage because of maximum flexibility. University tests prove their highest efficiency. They are installed by authorized dealers or direct factory branches.

CECO CAULKING COMPOUND

An especially prepared plastic caulking compound which remains permanently elastic, non-staining and waterproof and does not dry out hard. CECO Caulking adheres tightly to both metal and wood and can be painted over without staining or marring new finish.

SEND FOR CATALOGS

We have prepared new, complete, illustrated catalogs on all of the above products which are handy reference books for all types of steel building products. They will be furnished free upon request.



THE NEW CHICAGO PLANT of CECO STEEL PRODUCTS CORP.

Construction of this large new unit to CECO'S manufacturing plant in Chicago, necessitated by the increased demand for CECO Products, adds greatly to our facilities for prompt delivery of highest quality Steel Building Materials. The new unit houses improved facilities for

the manufacture of CECO Steel Windows, Metal Frame Screens, Steel Joists and Metal Lathing Materials.

CECO'S Manufacturing Division, located in the heart of the country, is augmented by CECO Sales Offices and Warehouses in eighteen cities throughout the country.

***Ceco* STEEL PRODUCTS CORPORATION**

Formerly **CONCRETE ENGINEERING COMPANY • INC.**

Manufacturing Division Headquarters • 5701 West 26th St., Chicago

General Offices • OMAHA

A NATIONAL ORGANIZATION AT YOUR SERVICE

The services of CECO Engineers and Sales Representatives in these strategically-located points throughout the country are at your command promptly for consultation and assistance in your construction problems.

GENERAL OFFICES • OMAHA, NEBRASKA

CECO DISTRICT SALES OFFICES

Dallas, 307 Construction Bldg.

Des Moines, Hubbell Bldg.

Detroit, 509 Guaranty Trust Bldg.

Houston, 2814 Pease Ave.

Indianapolis, 423 Berkley Road

Jersey City, Foot of New York Ave.

Kansas City, 1000 Waltower Bldg.

Los Angeles, 1450 Mirasol Street

Milwaukee, Bartlett Bldg.

Minneapolis, 2801 E. Hennepin Ave.

New Orleans, Carondelet Bldg.

Oklahoma City, 626 Insurance Bldg.

Omaha, 1141 North 11th Street

Peoria, South Bartonville

San Antonio, 501 Builders Exchange

San Francisco, 1280 Indiana St.

St. Louis, 4903 Delmar Blvd.